GEOGRAPHIC NEWS BULLETINS

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Contents for Week of March 17, 1941. Vol. XX. No. 4.

1. What Does the Western Hemisphere Include?
2. Britons Watch Coastline Almost Half as Long as That of U. S.
3. Devil-of-the-Deep Family Has Octopus Named for Roosevelt
4. Battle-Scarred Thessaloníkē a World War Veteran
5. New U. S. Defense Bases: Guam at Japan's Elbow

Photograph from Margaret M. Higgins

IT'S THE EARLY BIRD IN GUAM THAT CATCHES THE FISH

The low morning sun turns the early fisherman into a silhouette as dark as his reflection. Beyond the unbroken horizon of the Pacific surrounding the U. S. naval base island of Guam lies the small Japanese-mandated island of Rota. As the coral reefs around Guam break the force of the ocean waves, the inner waters are shallow and relatively calm. Fishermen rarely venture beyond the reefs in boats, but wade into the quiet shallows and spread their nets for the small fry. They are very skillful in the use of the nets, which they tend with greatest care, for a net is worth about $30—a small fortune in this tropical isle (Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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General Headquarters, Washington, D. C.

What Does the Western Hemisphere Include?

THE question, just what is a hemisphere, has suddenly ceased to be of interest to map-makers only. "Shall United States soldiers be restricted to military service within the limits of the Western Hemisphere?" Congress has been asked. But what are the limits of that hemisphere?

A hemisphere is a relatively new invention, as human history goes. In Biblical days men knew no terrestrial sphere to divide into halves. The earth they thought of was something like a platform supported on pillars, with the heavens as a canopy above it and dark waters beneath it.

Who Invented the Hemisphere Idea?

The Greek sages of Homer's time too considered the earth to be flat, circular as a dining room table, with oceans washing its dim outer edges. Their divisions of this flat earth were not hemispheres but "climates" or zones, classified according to the plants and animals they contained.

It was Egypt, indirectly, that made the world a sphere. In the library of Alexandria, a thoughtful astronomer of the 3d century B. C., Eratosthenes, concluded that the earth was round and even computed its circumference. He made what is believed to be the earliest division of the earth into "hemispheres," but by a north-south classification. His pioneer "equator" was a line extended through the Mediterranean and across Asia, called the parallel of Rhodes because that island marked its center. It was about 2,500 miles north of the true Equator. Europe, Asia, and Africa were the only continents Eratosthenes made room for on his sphere.

It was more than 1,700 years later that Columbus, Cabot, Vespucci, and their followers revealed two new continents, and Balboa unveiled a new ocean. While struggling to crowd the vast new regions on a chart of the world in 1512, an obscure map-maker of Cracow, Stobnicza, dared to split the globe into two hemispheres for the first time. He let half of Asia lap over into the New World circle. The celebrated cartographer Mercator in 1538 used a scheme for showing the world in two heart-shaped hemispheres, Northern and Southern, divided along the Equator.

Land Masses Cannot Be Equally Divided into Hemispheres

Since then, geographers have encountered increasing difficulty in slicing the sphere into east-west halves. The only division about which they can be positive is that into the Northern and Southern Hemispheres, with the respective pole as the exact center of each and the unswerving Equator as the dividing line. But for all other divisions, a hemisphere is merely any 180 degrees of the earth's surface, according to choice. There can be many such hemispheres, varying with the meridian of longitude chosen as the starting point.

In addition to the element of choice involved in defining Eastern and Western Hemispheres, there is the further difficulty that the great land masses of the earth are so unequal in size as to defy exact segregation in 180-degree divisions. Europe, Asia, Australia, and Africa—generally thought of as belonging in the Eastern Hemisphere—cannot be compressed into any true hemisphere because they stretch through 208 degrees of the earth's surface, with a lap-over of 28 degrees. On the other hand, North and South America—the Western Hemisphere lands—do not fill 180 degrees. When a full hemisphere is assigned to them, it necessarily cuts into European and Asiatic territory. Since no division of 180-degree hemispheres can

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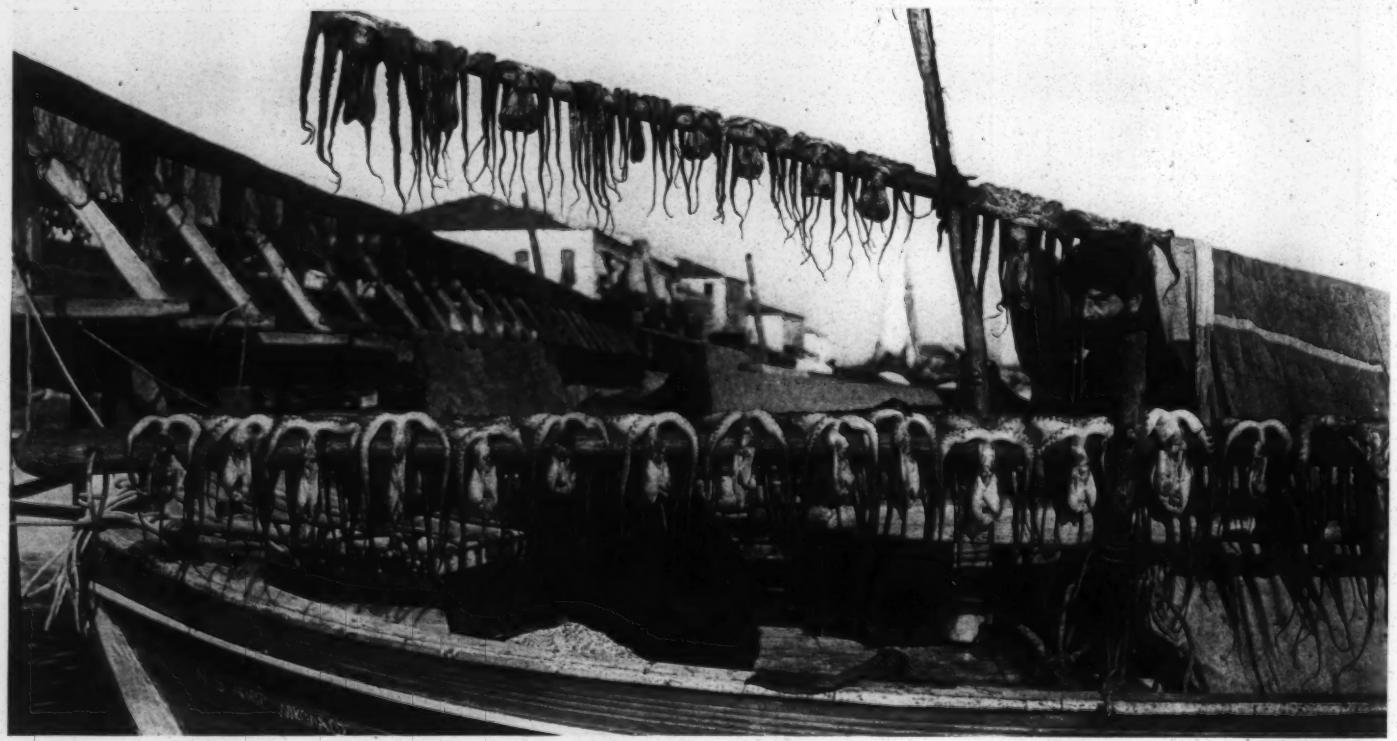

Photograph by Maynard Owen Williams

SEA-SALTED AND SUN-DRIED, A BOATLOAD OF OCTOPUSES IS AN APPETIZING SIGHT TO MEDITERRANEAN TASTES

The fisherman has brought a good day's catch into Porto Lago, in Greece. The octopuses are pounded to remove the inky secretion which the creatures squirt out to hide themselves from their assailants; then they are cut up and sold as a favorite sea food. The methods of catching them vary. Tunisian fishermen of North Africa tie earthenware jars together and drop them to the floor of the sea; attracted by the smooth white surfaces of these containers, octopuses creep inside for shelter, and are raised later when a profitable number have been caught. Other fishermen use tobacco for bait, together with fleabane; the smell of the mixture lures the cephalopods. Aristotle mentioned bait for capturing this popular item of Mediterranean diet (Bulletin No. 3).

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General Headquarters, Washington, D. C.

Britons Watch Coastline Almost Half as Long as That of U. S.

DEFENSE against invasion in Great Britain has been vastly complicated by the small island's long coastline, nearly every point of which has presented a not-impossible landing place for invading troops.

Together with Scotland, Wales, and Northern Ireland, England has a varied shoreline of more than 5,000 miles to watch.

For its area, Britain has a greater coast-defense problem than the United States. Although in square miles the U. S. is 32 times more extensive than the British regions in question, the British shoreline of 5,000 miles is equal to almost half of the coastal perimeter of the mainland United States (measured without islands)—11,936 miles.

Few Natural Protections on Sides Nearest German Bases

On the east and south, where the British face the closest German-held territories on the European continent in a semicircle curving from Norway to Spain, the coast is generally low, offering little obstruction to communication. Here and there, especially in the south, are the familiar chalk cliffs and downs, broken by beaches, plains, and gently rolling plateaus. Unlike the North Sea shores of Germany, sheltered behind innumerable sand bars and small islands, this part of England's coastline presents few such natural protections.

In the north and west, on the other hand, especially in Scotland, there are inhospitable mountains along the coast which plunge in many places directly into the sea (illustration, next page).

On maps published before the outbreak of the present war (such vital information has been suppressed since then), Britain's aerodromes, seaplane stations, and air bases of fighter squadrons were shown to be fairly crowding one another along the shore, particularly in the south and east and around the Edinburgh and Glasgow areas in middle Scotland.

No Spot Farther than 100 Miles from Sea

Sea and coastal fogs, too, have been counted on by Britain as potential allies against the invader. Normal sea fogs in the western channels (between Great Britain and Ireland) are usually heaviest in the summer months from May to August. But in the southeast, land, sea, or coastal fogs may occur at any time.

In the "tight little isle" of Britain, no important industrial and population centers are far from the coast. At no place on the island, in fact, is one more than 100 miles from a fairly good harbor.

London itself as the principal port and a leading industrial center—in spite of efforts to decentralize its many manufacturing activities—is so near the coast as to be only about 80 air line miles from German-held Calais across the English Channel. Southampton, Plymouth, and Portsmouth are among other strategic ports along England's southern shore, facing German-dominated France.

Britain's most centrally located industrial area, Birmingham, is only about 90 miles from the coast. The Glasgow-Rosyth-Edinburgh region, with its great shipyards, steel and allied industries, stretches from coast to coast across the narrow waistline of Scotland.

Such concentration of population and factory areas within easy reach of a long and irregular coastline has been pointed out as a liability to Britain when she is

UMI

both include the appropriate land masses and exclude the inappropriate ones, geographers have had to compromise along practical—but not straight—lines.

Most map-makers have accepted the meridian 20 degrees west of Greenwich, England, as the hemispheric boundary line. Geographically, the meridian includes the Cape Verde Islands and the Azores in the Western Hemisphere, but actually these island groups are more closely associated with the Eastern Hemisphere. The other borderline islands are Greenland and Iceland. Few people dispute that Greenland belongs logically in the world's western half, but Iceland, the bulk of which is east of this line, has been classified by different geographers in both hemispheres.

On the other rim of the Western Hemisphere, thus delineated, the boundary line would geographically be the meridian 160 degrees east of Greenwich. Such a line would divorce New Zealand from Australia, the easternmost extension of Siberia from the main bulk of the U.S.S.R., and many Japanese-mandated islands from Japan. Only map-makers, therefore, follow such a rigid definition of the Western Hemisphere's western boundary, to keep their circle round. Others generally accept as a compromise the International Date Line. This flexible time frontier has been zigzagged so as to leave New Zealand in the Eastern Hemisphere, all of the Aleutian Islands in the Western, and all of Siberia in the Eastern.

Note: Color reproductions of N. C. Wyeth's murals—The Maps of Discovery (Eastern and Western Hemispheres)—are available at 50¢ each. These maps, presented in a 15th-century chart effect, show the routes of great explorers from Marco Polo to Peary. The maps are 18 by 15⅞ inches.

Attention is also directed to the Map of the World in hemispheres, available at 50¢ (paper). A folder describing these maps, as well as the pictures and natural history books published by The Society, will be sent upon request.

Bulletin No. 1, March 17, 1941.

Painting by N. C. Wyeth

THE WESTERN HEMISPHERE WAS A SIXTEENTH CENTURY CREATION

Although the world was known to be a sphere 1,700 years before, modern hemispheres did not make their map debut until after the great westward voyages of New World discovery, shown on the chart above. Map-makers keep their hemispheres symmetrical, but for practical purposes the Western Hemisphere is smaller than this "portrait," and lacks most of the western-most 25 degrees. Routes of discoverers are shown on the two murals of the hemispheres painted by Wyeth for the walls of the Hubbard Memorial Library of the National Geographic Society's Washington, D. C., headquarters.

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Devil-of-the-Deep Family Has Octopus Named for Roosevelt

A CEPHALOPOD success story beginning in the Pacific has just reached its climax in Washington, D. C. It is the scientific biography of a nameless, eight-armed octopus picked up off the Galapagos Islands during President Roosevelt's visit to the island group in 1938. The relatively small, mind-mannered creature, almost two feet long, proved to be a hitherto unclassified type, and scientists have decided to put it at the head of a new branch of the octopus family with the title of *Octopus roosevelti*.

Evil Appearance Lends Color to Legend

With the giant squid, chambered nautilus, argonaut, and other underwater creatures, this marine animal is a member of the class *Cephalopoda* (meaning "head-footed"). Found in deep and shallow water of most of the world's seas, its various species range in size from less than 12 inches in full arm-spread to nearly 30 feet. Unlike the nautilus and argonaut, however, which are celebrated for their beauty in story and verse, the octopus, with the squid, has long been relegated to the rôle of villain in atrocity tales of the deep.

Since sailors first began spinning their adventure yarns, the octopus has been associated in popular fancy with such murderous legendary creatures as the Minotaur and the sea serpent. With his mournful, hoodlike face, his bulging, lidless eyes, and eight writhing arms studded with suckers, his appearance alone is terrifying enough to provoke a raconteur into fiction.

Both the French novelists Jules Verne, for example, and Victor Hugo, the latter in his *Toilers of the Sea,* present vivid and fearsome—but inaccurate—accounts of fights between men and octopuses.

While stories of his misdeeds are often exaggerated, the reputation of an infuriated octopus is not wholly undeserved. This "devil fish" has been known to make vicious attacks on other large ocean denizens as well as on men and boats. Many of the smaller species are inoffensive and even timid, but the big fellows are ferocious in action. And unlucky is the deep-sea diver who comes within range of the clutching tentacles.

When Not Red with Rage, a Playmate for the Baby

In addition to quivering, striking out with his tentacles, and otherwise expressing menace, this eight-armed fighter also has a disconcerting habit of showing emotion by rapid changes in color. An octopus at bay turns red with rage, and squirts toward the assailant an inky fluid that pollutes the water and forms an effective protective screen about him.

The diet of the octopus consists largely of crustaceans and similar sea food (illustration, next page). When the menu is especially plentiful, he may pursue several items at once, holding his captures in some of his arms, while reaching out for others.

Apparently, however, the octopus has more arms than brains, for he has been observed in captivity to eat his own arms, even when he has been provided with plenty of other food.

An acrobat of sorts, some species of octopus, when ready to spring, balance themselves by attaching several tentacles to the sea floor, reaching out and grasping the prey with those left over. Once the victim is snared, the octopus weighs anchor

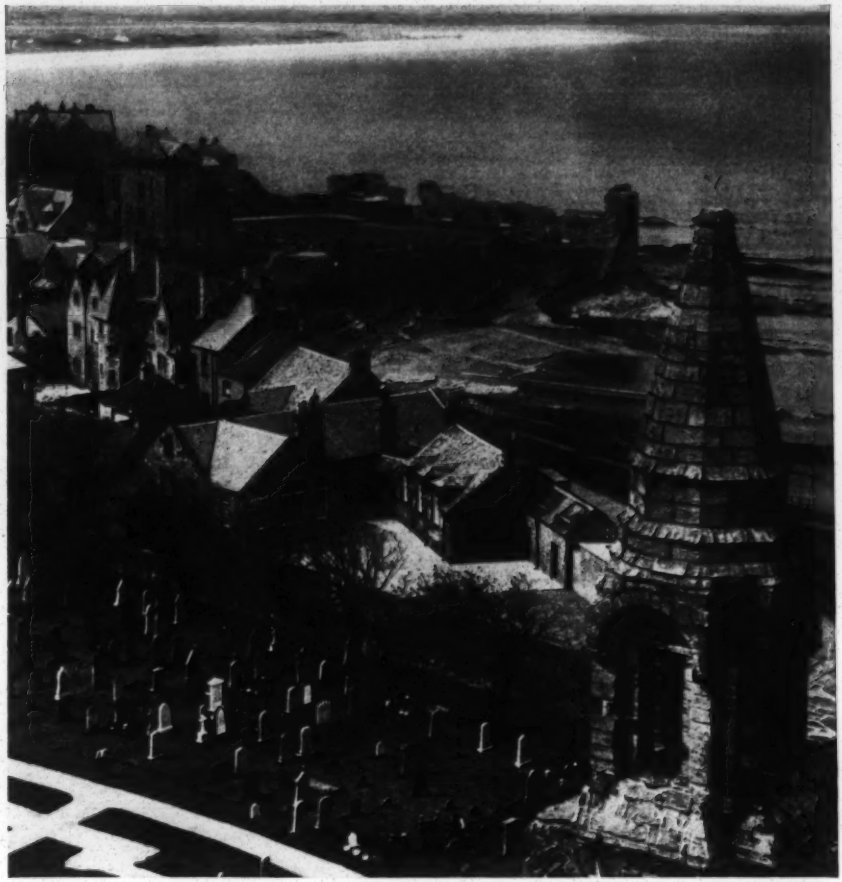
UMI

seeking to defend herself against air or land invasion. Yet the compact nature of the island's communications system, with the vital regions closely linked, also provides geographic basis for greater strength and unity in defense.

Note: See also "Along England's Harassed Coast" (duotone insert), *National Geographic Magazine*, August, 1940; "Old Ireland, Mother of New Eire," May, 1940; "Southampton—Gateway to London," January, 1940; "Pilgrims Still Stop at Plymouth," June, 1938; "Low Road, High Road, Around Dundee," April, 1936; "Mist and Sunshine of Ulster," November, 1935.

Great Britain's vulnerable coastline may be noted on The Modern Pilgrim's Map of the British Isles, priced at 50¢ (paper) and $1.00 (linen).

Bulletin No. 2, March 17, 1941.



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OBSOLETE DEFENSES ARE DANGER SIGNALS ON A FAMOUS PLAYGROUND

The steep rock coast of Scotland was once considered heavily fortified for the defense of St. Andrews, standing just across the cold North Sea from southern Norway, now occupied by menacing German troops. The tower (right foreground) is a reminder of the ruined cathedral. The crumbling sea-wall along the cliff (center) once defended Bishop Roger's castle (left background). Scotland's oldest university, situated beyond the castle, has enrolled such distinguished students as Sir James M. Barrie, the literary father of Peter Pan. In modern times the town has been the international capital of the game of golf, and the old golf course across the bay (distant background) is world famous. The graveyard contains tombstones on which golf balls and other symbols mark the graves of champions.

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Battle-Scarred Thessaloníkē a World War Veteran

STANDING in the line of crossfire between British and Germans in the eastern Europe sector of the war, the Greek seaport city of Thessaloníkē (also known as Thessalonica and Salonika) has come to the forefront of the news.

Greece's second city, ranking next to Athens, Thessaloníkē is the chief outlet of the Balkan countries to the Aegean. At the head of the Gulf of Salonika, it stands at the Aegean's northwest corner. It is a vital communications center, in normal times, for rail, sea, and air commerce. In war it is of considerable strategic value because of its central location on the trunk railway which runs not only the entire length of the Greek mainland but cuts across Yugoslavia to join a network of central European lines.

New Rail Link into Bulgaria Only Recently Completed

Of special interest in connection with the spread of the war in southeast Europe is a branch of the Greek main line, whose final link, reaching to the Bulgarian border, was only completed in the spring of 1940. This line, the northernmost stretch of the Greek rail system, runs from Thessaloníkē to Petrich, in the southwest corner of Bulgaria. From there rails proceed to the Bulgarian capital of Sofiya, and beyond.

For through traffic, however, the new route has one practical drawback. In Greece the rails are standard gauge of 4 feet 8½ inches, while in Bulgaria the line is narrow gauge. To overcome this difficulty, which would require the transfer of freight and passengers—and troops and supplies—the Bulgarian Government has been reported recently engaged in the construction of parallel lines of standard gauge at certain stretches along the route.

In Greece, the Thessaloníkē-Petrich railway passes through country where military headlines were made during the first World War. One of the chief fighting areas of that war was in the region north and east of the Aegean seaport.

Allied Troops Occupied Salonika in 1915

The "Salonika Campaigns" were initiated with the landing in 1915 of Allied troops at Salonika, as the city was called until 1937 brought the restoration of the older name, Thessaloníkē. By 1916 the city and surrounding areas had become a vast armed camp of some 400,000 men, including French, British, Serbian, Russian, and Italian divisions aligned against Bulgarian and German forces.

As the armies advanced and retreated, troops crossed and re-crossed the Struma River, whose valley the new railway section follows from the Greek station of Demir Hissár to Petrich, just across the Bulgarian border. It was on a wide front west of the Struma that the Allies launched in September, 1918, the final successful advance into Serbia and Bulgaria, which resulted in Bulgaria's surrender.

As the scene of dramatic happenings, the city of Thessaloníkē itself, from the time of its occupation until the end of the War, figured prominently in the world's news. In 1916, an anti-royalist, pro-Allies revolution broke there; in November of that year its nationalist government declared war against Bulgaria and Germany. It was not, however, until 1917 that Greece officially entered the War.

In August, 1917, a great fire which raged unchecked for two days destroyed the major portion of the town, leaving 100,000 people homeless. On the other hand, a happier news dispatch reported this city, in 1918, as headquarters for the signing of the armistice which followed Bulgaria's capitulation.

The ancient city of Thessalonica, linked in history with the march of Xerxes

UMI

and pounces upon him. With umbrella-like membranes drooping about the trapped creature, the powerful parrot beak of the octopus is then in position to do the rest.

Miniature varieties of the octopus, on the other hand, while no more prepossessing than the large monsters, are such harmless creatures (illustration, inside cover) that one could safely trust them with the baby. It is recorded, in fact, that the Greeks in ancient times used to present the animals to a five-day-old child in order that play with their numerous arms might strengthen the little hand-grip.

More conventional, and credible, is the use of the animal's glandular product of ink, or sepia, for water-color work and dyes. This sepia, with a similar but superior secretion from the cuttlefish, was the ancient "India ink."

The octopus also makes good fish bait, its main value among Western nations. For human consumption, cephalopods have been prized by various peoples since ancient times. The octopus is a favorite oriental dish, and in split and dried form is frequently found in oriental stores. Restaurants in New York City prominently advertise octopus when this item of diet is in season.

Note: Additional information about the octopus is included in The Book of Fishes, available at $3.50. Special folder F-4-40 describing this volume will be sent upon request.

See also "The Celebes: New Man's Land of the Indies," *National Geographic Magazine*, July, 1940; "Where Nature Runs Riot," June, 1940; "Sea Floor Aquarelles from Tongareva" (insert of color photographs), September, 1938; "Friendly Journeys in Japan," April, 1936; "Marauders of the Sea," August, 1935; "A Wonderer Under Sea," December, 1932; and "New Greece, the Centenarian, Forges Ahead," December, 1930.

Bulletin No. 3, March 17, 1941.

Photograph from John Oliver La Gorce

THE WELL-ARMED OCTOPUS CAN CONQUER ALMOST ANY AQUARIUM

Among the weapons with which nature has provided the octopus in his battle for existence are warlike methods of camouflage and smoke-screening. This chameleon of the deep can change color, and turns convincingly red with rage when menacing a victim. His secret weapon is an inklike secretion which makes a liquid "smoke screen" when he squirts it out to hide himself from enemies. After one bite from the eight-armed creature's sharp parrotlike horny beak, a crab appears to be paralyzed, perhaps by an injection of poisonous saliva. Despite his unendearing ways, the octopus was a favorite food of ancient Greeks and Romans—as a pie. Removing the arms, cooks stuffed the body with spices and baked it.

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New U. S. Defense Bases: Guam at Japan's Elbow

(This is the eighth of a series on the defense bases.)

TIME STOOD STILL for the island of Guam, in one respect, from 1922 until the present year. An agreement between the United States and Japan, with Great Britain also signing, to limit fortifications in the Pacific to their 1922 level kept slumbrous little Guam's U. S. naval base at the status quo for 19 years. In 1936 Japan abrogated the agreement. Last month the Congress of the United States appropriated funds to strengthen the harbor of Guam.

When the Philippines are granted full independence, Guam will become the United States' most westerly outpost, 5,155 nautical miles from San Francisco. This distant base lies at the southern end of Japan's chain of Marianas Islands, due north of New Guinea and Australia. It is 1,334 miles from the nearest U. S. territory, which is Wake Island to the east in the mid-Pacific; Honolulu is 3,318 miles east. The Philippines lie 1,500 miles west. The nearest bit of land is about 50 miles to the north, the Japanese-mandated island of Rota. Guam has been United States territory since 1898, when the Spanish surrendered it.

Flat Reef-ringed Island of Volcanic Origin

South of Guam the Caroline Islands, which like the Marianas Islands are former German possessions mandated to Japan, extend east and west. Guam is practically surrounded by islands under Japanese control.

This volcanic island has a flat appearance when viewed from an approaching ship. Actually it rises in the south to a 1,300-foot peak and extends thence north-northeast for a total length of about 26 miles, its width varying from 4 to 8 miles. It has approximately the area of a 15-mile square, or about 225 square miles.

The southern end of the island is fronted by a reef of rock and islets that encircle Cocos Island, a mile or two off shore. The eastern coast is steep and rugged, and the northern end of the island is a plateau 200 to 500 feet high. Rocky points along the western shore form many small sandy bays.

Palm Trees Form Skyline of Capital City

Small settlements head several of these western bays (illustration, next page). Agaña, the largest town and capital city, has 10,000 residents, or about half the island's population. An imposing building houses the government offices, and the capital also has a Marine barracks and hospitals. The Governor is a U. S. Navy officer designated by the President of the United States.

Agaña has about 300 resident Americans, and many Spaniards. The remainder of the people are mostly natives, or Chamorros. In concrete school buildings American teachers instruct Chamorro children in agriculture, handicrafts, and English.

Agaña is situated on the west coast. To the south lies the naval harbor of Port Apra, where is located Piti village, chief commercial port, five miles from Agaña by a road fringed with coconut palm. Palm trees also form the skyline of the capital city.

Most foreign traffic now moves by air, via the trans-Pacific Clipper planes.

The natives are friendly towards the United States. Most prized by the men, as America's contribution to their well-being, are motorcycles and automobiles, while the acme of American civilization with the women is a sewing machine. Young women "dress American" until they marry, then revert to native costumes.

Bulletin No. 5, March 17, 1941.

UMI

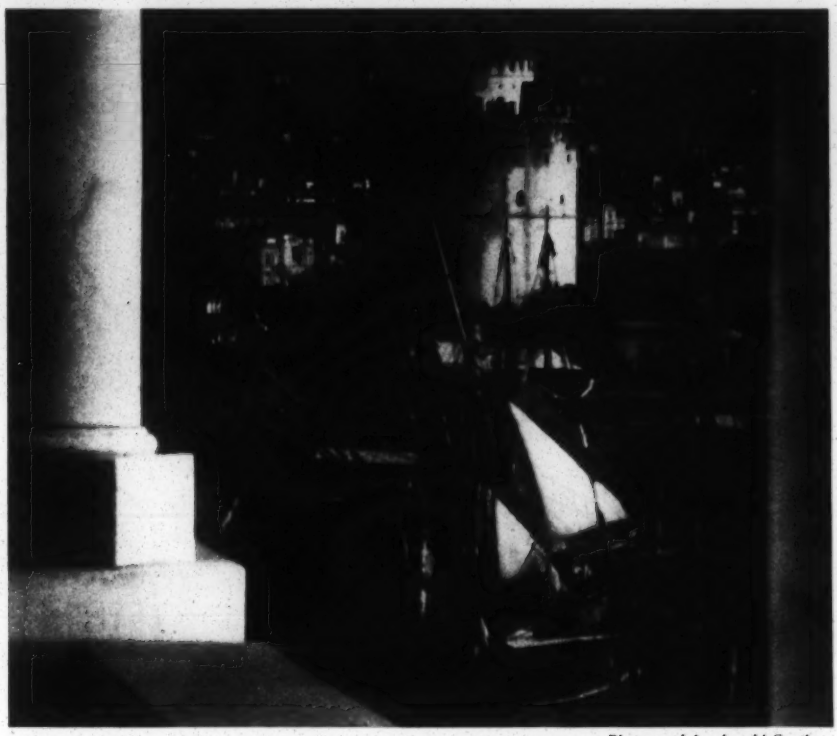
through Greece and with St. Paul's Epistles to the Thessalonians, has a long and bloodstained biography. A trade and military station on an important highway from Rome to the East, it was the scene in 390 A.D. of the massacre by the Emperor Theodosius of some seven thousand citizens. In turn, it was conquered by the Saracens, the Norman rulers of Sicily, and the Turks. When, during the first Balkan War, the Greeks captured the city in 1912, it had been for nearly 500 years in the hands of the Turks. The next year King George I of Greece was assassinated there.

The modern city has a mixed population of more than 230,000 Greeks, Turks, Jews, Bulgars, Serbs, Italians, and Frenchmen. It manufactures such varied products as leather goods, arms, tiles, soap, and cutlery. Normal exports include grain, silk cocoons, wool, cotton, tobacco, manganese, and opium. Leading imports are sugar, coal, iron, oil, hardware, salt, and coffee.

Note: Additional illustrations and information about Thessalonikē will be found in "Classic Greece Merges into 1941 News" (photographic insert), *National Geographic Magazine*, January, 1941; "Ageless Luster of Greece and Rhodes" (insert of duotone photographs), April, 1938; and "History's Greatest Trek," November, 1925.

See also The Society's Map of Europe and the Near East, and the Map of the Classical Lands, priced at 50¢ (paper) and 75¢ (linen).

Bulletin No. 4, March 17, 1941.



Photograph by Arnold Genthe

THESSALONÍKĒ WAS HALF-MODERNIZED BY FIRE

The Greek city, ancient enough to remember Cicero and St. Paul, was studded with old masonry like the round White Tower with the double row of crenelations on top, the stronghold which Turks used as a dungeon during their period of control. The 1917 fire destroyed the non-fireproof buildings of half the city, and new construction has lined the waterfront with modern structures and a spacious promenade (left of center). The sharp angles of new marble columns now frame a vista of fishermen's sailboats in the harbor, which is ordinarily busy with the commerce of all the Balkan nations taking advantage of Thessalonikē's free port arrangements.

Coconut groves along the west coast are three to four miles long and a mile or two wide. They supply the natives with an important food staple, and with coconut oil for cooking and for lighting their huts. The island ships about 2,000 tons of the coconut meat annually, and also coconut oil.

Guam produces Indian corn, copra, rice, sweet potatoes, coffee, bananas, pineapples, citrus fruits, mangoes, papayas, breadfruit, cacao, cassava, kapok, alligator pears, sugar cane, tobacco, and much valuable timber.

Note: See also "Guam—Perch of the China Clippers," *National Geographic Magazine*, July, 1938; and "Flying the Pacific," December, 1936. And in the GEOGRAPHIC NEWS BULLETINS: "Defense at Guam, Sunset Extremity of the United States," January 30, 1939.

An inset map of Guam, showing land nearest to it (Japanese island of Rota), appears on the Map of the Pacific. The Map of the Indian Ocean shows the distances between Guam and Manila, Wake Island, and Honolulu, and includes also an inset map of Guam. A folder describing The Society's maps will be sent upon request.

Bulletin No. 5, March 17, 1941 (over).

Photograph by L. R. Hubbard

GUAM LOOKED LIKE PARADISE TO MAGELLAN, ITS EUROPEAN DISCOVERER

The island which now imports a quantity of supplies from the United States was self-sufficient enough to furnish provisions to Magellan's expedition when he reached there in 1521, the first land he had sighted in nearly four months. The coconut palm yields food to the natives, and shelter as well. The two-room chimneyless cottages of this seaside fishermen's village are thatched with palm fronds, and for coolness many of them have windowless side walls of woven matting. The wooden parts of the structures are of tough *ifil* hardwood trees, "Guam's mahogany," and last for generations, while the thatch roofs are renewed every three years. The "clothes-lines" (right) are drying racks of palm fronds spread over bamboo framework.

U. S. DEFENSE BASES SERIES

This is the eighth of a series of bulletins on U. S. defense bases. The first seven Bulletins are still available in limited quantities at the Washington, D. C., headquarters of the National Geographic Society. Teachers whose subscriptions began after this series started, or who wish to replace copies missing from their files, may obtain these bulletins free of charge as long as the supply lasts.